What is claimed is:

1. A welded item, comprising:

at least two layers of flexible thermoplastic material secured together along a welded perimeter seam to form a wall of an enclosed, airtight chamber, having an interior surface and an exterior surface,

wherein each of said layers forming said wall has a uniform thickness; and

wherein all wall thickness dimensions in the area of said welded perimeter seam are at least as great as the uniform thickness of the layers forming said wall, so that said welded perimeter seam has a tensile strength that is at least half of the tensile strength of the wall in which it is formed.

2. A welded item as recited in claim 1, wherein said item includes a tail projecting outwardly from said welded perimeter seam and said two layers of material, said tail having a thickness less than 0.6 times the total thickness of said layers.

3. A welded item as recited in claim 1, and further comprising a valve providing an inflation pathway extending through said wall.

4. A welded item, comprising:

at least two layers of flexible thermoplastic material secured together along a welded seam to form a wall of an enclosed, airtight chamber, having an interior and an exterior,

wherein said layers have a uniform thickness,

wherein said welded seam includes an interior portion, and

wherein the entire interior portion of said welded seam is at least as thick as said uniform thickness.

5. A welded item as recited in claim 4, and further comprising a valve through said wall.

6. A method for welding together two layers of thermoplastic material, comprising the steps of:

providing first and second opposed dies, each of said dies having a flat portion and defining a recess adjacent to said flat portion;

placing two layers of thermoplastic material between said first and second opposed dies, with the flat portions of the dies opposite each other and the recessed portions of the dies opposite each other;

applying energy to said dies to melt the thermoplastic material between said dies; and

pressing said dies together to compress the material between the flat portions of the dies at least 70%, thereby extruding some of the thermoplastic material into the recesses of said dies.

7. A method for welding together two layers of thermoplastic material as recited in claim 6, wherein said heating is achieved by applying radio frequency electrical energy to the dies, and wherein the opposed recesses in the first and second opposed dies are mirror images of each other.

8. A method for welding together two layers of thermoplastic material as recited in claim 7, and further comprising the step of causing the layers on the recessed side of the dies to be held apart from each other during the extruding process.

9. A method for welding together two layers of thermoplastic material as recited in claim 8, wherein said flat surfaces and said recesses define the perimeter of an inflatable welded item; and

wherein the layers are held apart by inflating the item.

10. A method for welding together two layers of thermoplastic material as recited in claim 7, and further damming the side of said flat portions opposite said recesses in order to direct extruded material toward said recesses.

11. A method for welding together two layers of thermoplastic material as recited in claim 9, and further damming the side of said flat portions opposite said recesses in order to direct extruded material toward said recesses.

12. A method for welding together layers of thermoplastic material of uniform thickness to form an airtight, inflatable product, comprising the steps of:

providing first and second opposed dies including opposed flat surfaces and opposed recesses adjacent to said opposed flat surfaces, so as to define the perimeter of the inflatable product;

placing the layers of thermoplastic material between said opposed dies;

applying energy to melt the thermoplastic material between the opposed flat surfaces;

injecting gas between said layers in order to hold the layers apart from each other within said perimeter; and

pressing said dies together until the gap between said opposed flat surfaces is less than 60% of said uniform thickness in order to extrude some of the melted material into the recesses.

13. A method as recited in claim 12, wherein there is a valve extending through one of said layers, and the step of injecting gas includes injecting gas through said valve.

14. A method of installing a valve for a welded item, comprising the steps of:

forming a valve body wall, defining a cylindrical chamber, having a central axis and a first diameter and first and second axially-spaced ends, with a first opening at said first end having a first opening diameter substantially smaller than said first diameter and a large opening at said second end, having a diameter substantially equal to said first diameter, and a flange projecting outwardly at said second end;

inserting a flexible valve insert inside said cylindrical chamber, said flexible valve insert having a valve insert diameter;

welding a layer of thermoplastic material to said flange, with the layer of thermoplastic material covering said large opening; and

forming a third opening in said layer of thermoplastic material aligned with said central axis and having a smaller diameter than said valve insert diameter in order to retain the valve insert inside said chamber.

15. A method as recited in claim 14, wherein said valve insert is cylindrical and has an axial height extending the full length of said cylindrical chamber between said first and second axially spaced ends and an outside diameter that creates an interference fit with said cylindrical chamber.

16. A method as recited in claim 14, wherein said valve body is made of the same thermoplastic material as said layer of thermoplastic material to which it is welded.

17. A method as recited in claim 16, wherein the diameter of said first opening is less than 40% of the diameter of said cylindrical chamber.

18. A method as recited in claim 17, wherein said third opening has a larger diameter than said first opening.

19. A method as recited in claim 18, wherein said valve insert is cylindrical and has an axial height extending the full length of said cylindrical chamber between said first and second axially spaced ends and an outside diameter that creates an interference fit with said cylindrical chamber.

20. A method as recited in claim 19, wherein said valve insert has an opening extending along its axis, which is compressed closed by said valve body and through which an inflation needle may pass to insert gas through said valve.

21. A ball, comprising:

at least first and second layers welded together along a perimeter weld to form a wall having an internal chamber; and

a plenum welded to said first and second layers along said perimeter weld and dividing said internal chamber into two portions, wherein there is an opening through said plenum through which said two portions are in fluid communication with each other.

22. A ball as recited in claim 21, and further comprising a valve extending through at least one of said first and second layers.

23. A ball for use in a tire assembly, comprising:

a thin wall, defining an interior surface and an exterior surface and a diameter;

wherein the thickness of said thin wall is less than two percent of the diameter, and wherein said ball can support a load in pounds that is at least one hundred times the cube of its diameter in inches without exceeding its tensile limit, without exceeding its elastic limit, and without expanding more than 50% from its initial surface area.

24. A ball as recited in claim 23, wherein said ball includes a valve.

25. A ball as recited in claim 24, wherein said ball is made of polyurethane.

26. A ball as recited in claim 24, wherein said ball is made of welded-together layers.

27. A welded item as recited in claim 1, wherein said welded perimeter seam has a tensile strength that is at least 75% of the tensile strength of the wall in which it is formed.

28. A welded item as recited in claim 1, wherein said welded perimeter seam is a butt weld.

29. A welded item as recited in claim 28, and further comprising a tail projecting outwardly from said butt weld, said tail having a thickness less than 0.6 times the total thickness of said layers.